

From Nature, To Nature – Josab water solutions AB





ABOUT US

Josab Water Solutions AB is a global clean water solution provider. We offer sustainable products, green technology and spread knowledge about how water can be purified in an ecological and sustainable way.

Because of the filter material Aqualite™, large volumes of water can be purified in an ecological way to a low cost, leading to long term sustainability.

Josab Water Solutions AB is committed to driving a sustainable circular economy around the world.

ABOUT AQUALITE™

Aqualite™ is a natural zeolite with excellent adsorption capacity. With it's 2-in-1 solution, Aqualite™ acts on both particulate pollution and cationic dissolved pollution.

WHAT IS ZEOLITE?

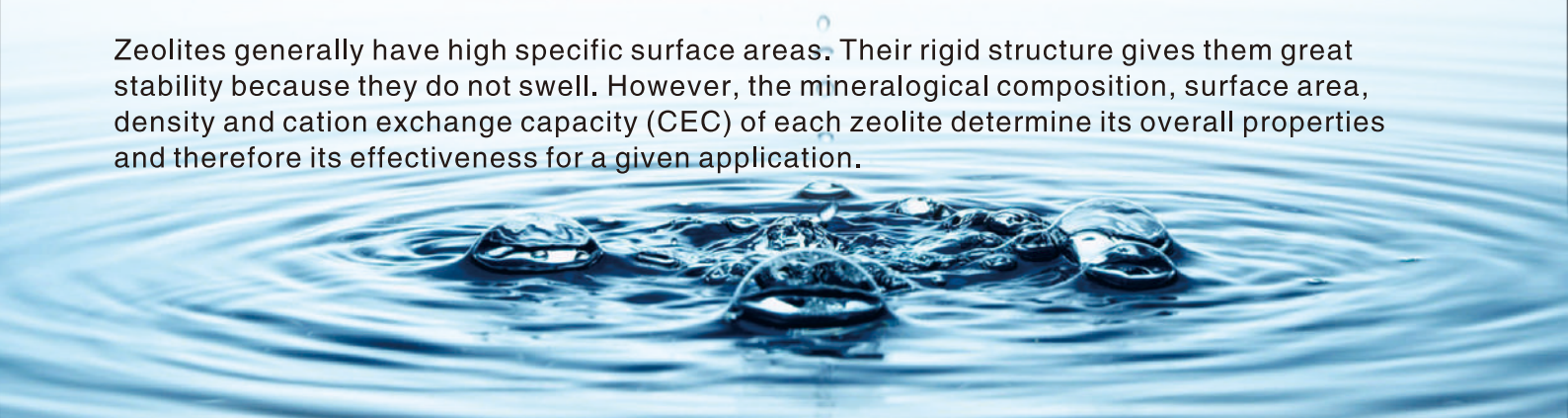
Zeolites belong to a large family of minerals that includes nearly 200 types. Natural zeolites form a small group of about thirty species in this large family.

Natural zeolites were formed by the transformation of volcanic ash that was deposited in lakes and seas tens of millions of years ago. Natural zeolites are aluminosilicate of hydrated alkali or alkaline earth metals.

These non-toxic minerals are often called "molecular sieves" because of their porous and open structure formed of cages connected by a vast network of interconnected channels that can be roughly compared to a "honeycomb". Positively charged atoms (cations) such as alkali or alkaline earth metals are linked with negatively charged aluminosilicate lattice structure. These cations can be replaced by others having a greater affinity for the inorganic matrix, which gives zeolites one of their main characteristics: the cation exchange capacity.

The channels have a size close to that of a molecule of water so that the smallest molecules can penetrate the zeolite's pores while the largest ones cannot pass through, thus giving rise to the term "molecular sieve".

Zeolites generally have high specific surface areas. Their rigid structure gives them great stability because they do not swell. However, the mineralogical composition, surface area, density and cation exchange capacity (CEC) of each zeolite determine its overall properties and therefore its effectiveness for a given application.



WHY AQUALITE™?

Aqualite™ was discovered at the R à tka mine in northern Hungary. This unique local geology makes it an unparalleled water purification mineral. After mining the bulk material, further production takes place at JOSAB's own production plant in Szerencs.

Aqualite™ is widely used for decades in water purification and is especially suitable for producing pure drinking water from fresh water sources. As an excellent filter media, Aqualite™ is also used for swimming pool water treatment, industrial wastewater treatment and agricultural irrigation water treatment.

GREEN MINERAL FOR GREEN WATER CLEANING - AQUALITE™



Which filter media good for you?

	Aqualite™	Filter sand	Activated carbon
Mechanical filtration	Yes	Yes	No
Ammonium removal	Yes	No	No
Iron and manganese removal	Yes	No	No
Heavy metals removal	Yes	No	No
Organic compound removal	No	No	Yes

OTHER IMPORTANT TECHNICAL INFORMATION OF AQUALITE™

- Pore diameter 0.1–1.0 nanometer (nm)
- Large specific area
- Can reduce bacteria, bad smells, bad taste
- Reduces heavy metals, ammonium and hydrogen compounds
- Adsorbs chemical and petroleum products
- Porosity: 20–31 (%)
- Specific surface 29.1 (BET m².g⁻¹)
- Standard grain sizes: 0–20µm; 0–500µm; 0.5–1mm 0.5–2 mm; 0.7–1.5 mm; 2–5mm; 5–10mm
- Standard packaging 25 or 40 kg PP bags (40; 25 pcs/palette) 1 ton/palette
- Big-bag 600/800/1000kg



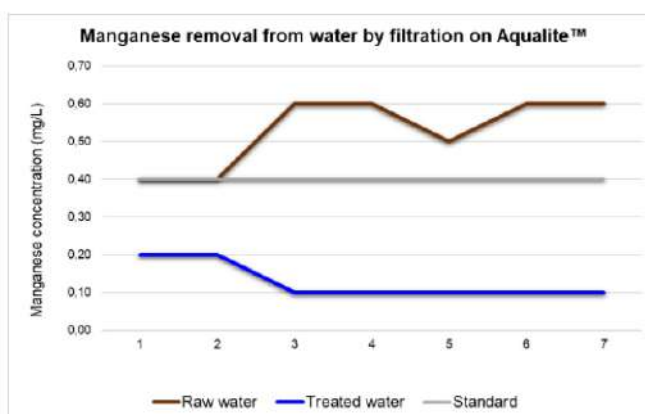
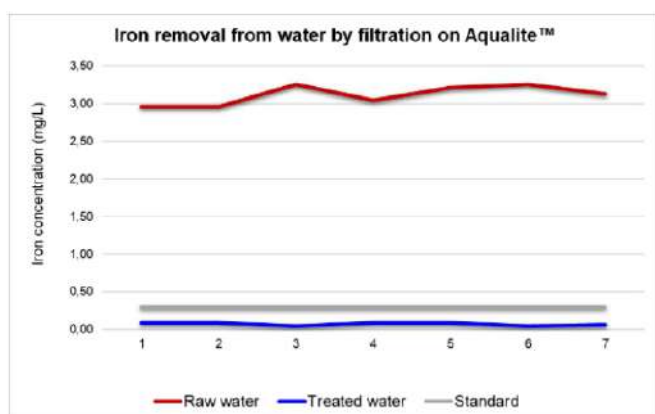
APPLICATIONS

AQUALITE™ FOR DRINKING WATER

Aqualite™ is an excellent choice to produce drinking water from natural fresh waters. This material is particularly suitable for the purification of waters which slightly exceeds the standards, and which have, for example, a slightly higher ammonium content or heavy metals in cationic form. Thus, Aqualite™ avoids using expensive and complex techniques such as membranes (micro-, ultra-, nano-filtration).

If these techniques prove to be necessary because of the specificity of a water, then Aqualite™ can be used upstream of the membranes in order to treat the water as much as possible and to reduce membrane maintenance operations and exploitation costs.

One of the remarkable applications of Aqualite™ is the removal of iron and manganese from underground water. Aqualite™ is able to eliminate iron and manganese concentrations up to 3.0 ppm and 0.7 ppm respectively to levels below the standards recommended by the WHO.



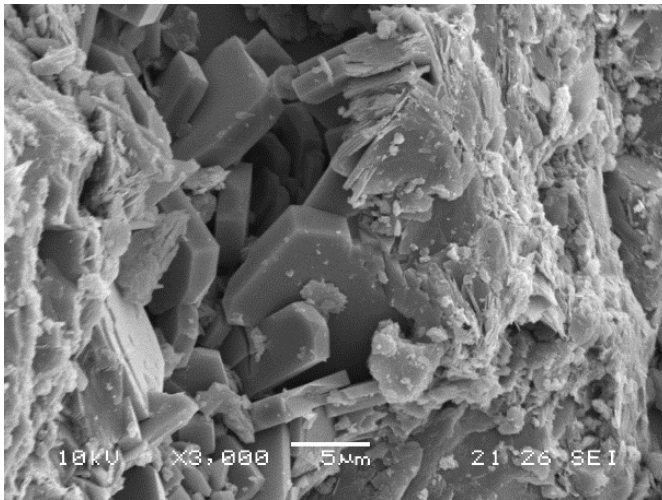
The entire Aqualite™ water purification process is completely chemical free. Water purified with Aqualite™ meets the quality requirements of the WHO regulations for drinking water.

-AQUALITE™ FOR SWIMMING POOL

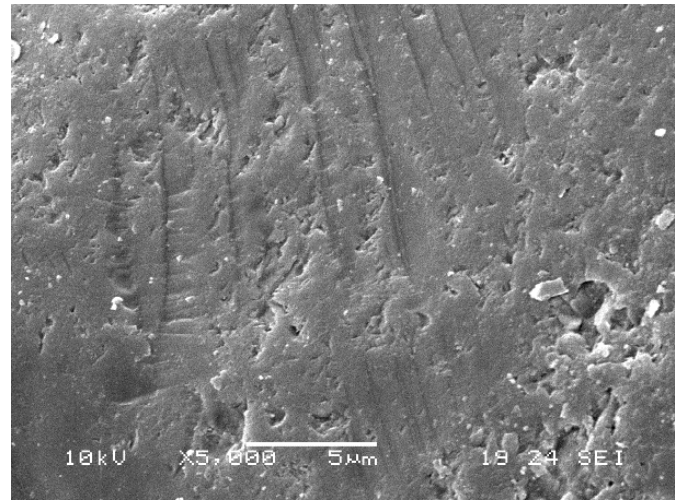
Aqualite™ as a 100% natural product is an excellent filtration media for treatment of water in swimming pools that maximizes the water quality and significantly reduces the costs associated with pool water maintenance. It is used to replace sand in filters.

Aqualite™ is able to obtain a fineness of filtration close to 10 microns against 40 to 60 microns for sand and without the use of flocculant.

This exceptional ability to filter resides both in the structure of Aqualite™ and also in the shape of its grains, which offers a better grip of particles in suspension compared to sand.



Natural zeolite surface



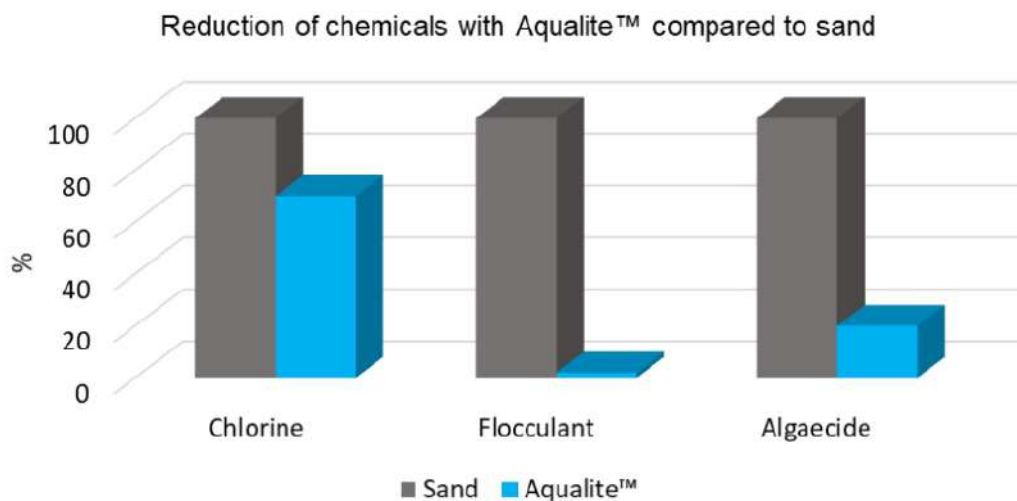
Sand surface

Aqualite™ is able to act not only on particles but also on dissolved chemical compounds by trapping them or promoting their degradation.

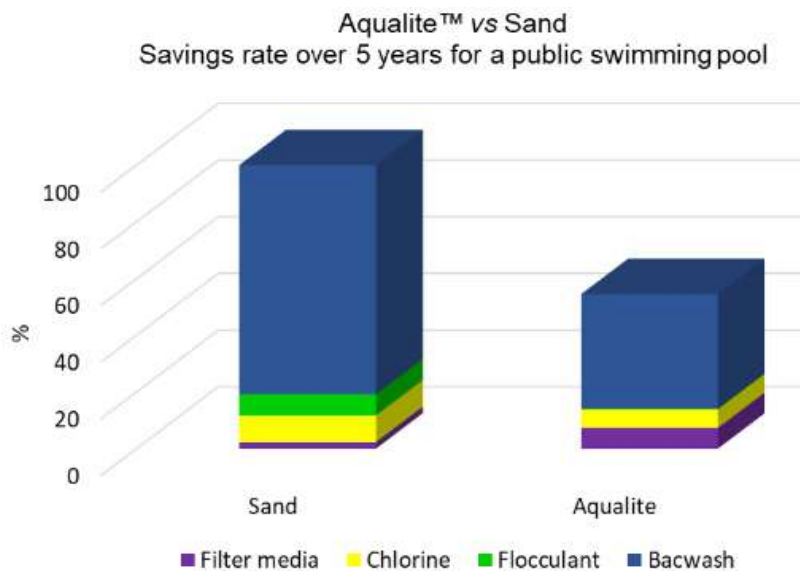
Aqualite™ can remove ammonia brought by swimmers (organic matter of the nitrogen type: sweat, mucus, urine, etc.) and greatly reduces the presence of chloramines by simply preventing their formation.

The use of Aqualite™ therefore reduces shock treatments, chlorine consumption and reduces filter maintenance. With Aqualite™, chlorine is no longer blocked by ammonia, it can again act as a disinfectant and anti-alga! No need to overdose on chlorine to fight against microbes, nor shock treatments based on copper or quaternary ammonium to eliminate algae.

The reduction of nitrogenous and organic nutrients in the water allows a better balance to be achieved and thus reduces the overall chemical requirements. This comfort is highly appreciated by swimmers and professionals.



Although Aqualite™ is more expensive than sand, the savings made on a private or public swimming pool can reach up to 46% over 5 years by combining the main expenses related to water treatment (excluding energy) including the purchase of filter material.



Aqualite™ is a solution in accordance with a sustainable development approach. By using it, everyone makes a significant gesture for the protection of the environment.

Aqualite™ is compatible with the main water treatment products: organic chlorine, hypochlorites, salt electrolysis, bromine but not with metal based chemicals (copper, silver, etc)...

BENEFITS:

- A 25 kg bag of Aqualite™ is equivalent to approximately 40 kg of sand.
- The low density of Aqualite™ compared to sand, drastically reduces the energy required for filtration.
- The filter media is lighter and therefore easier to backwash, reducing the frequency of filter cleaning and reducing the water consumption required for flushing (up to 50 %).
- Enhanced adsorption of contaminants, capable of capturing particles as small as 10 microns, while sand can only capture a minimum of 40 microns.
- Removal of ammonia from water increases chlorination efficiency, ie reduces the amount of chlorine required to treat pool water by up to 30%.
- Controls malodorous volatiles (chloramines).

AQUALITE™ FOR AGRICULTURE & GREENHOUSE



1. The transmission value is greatly improved

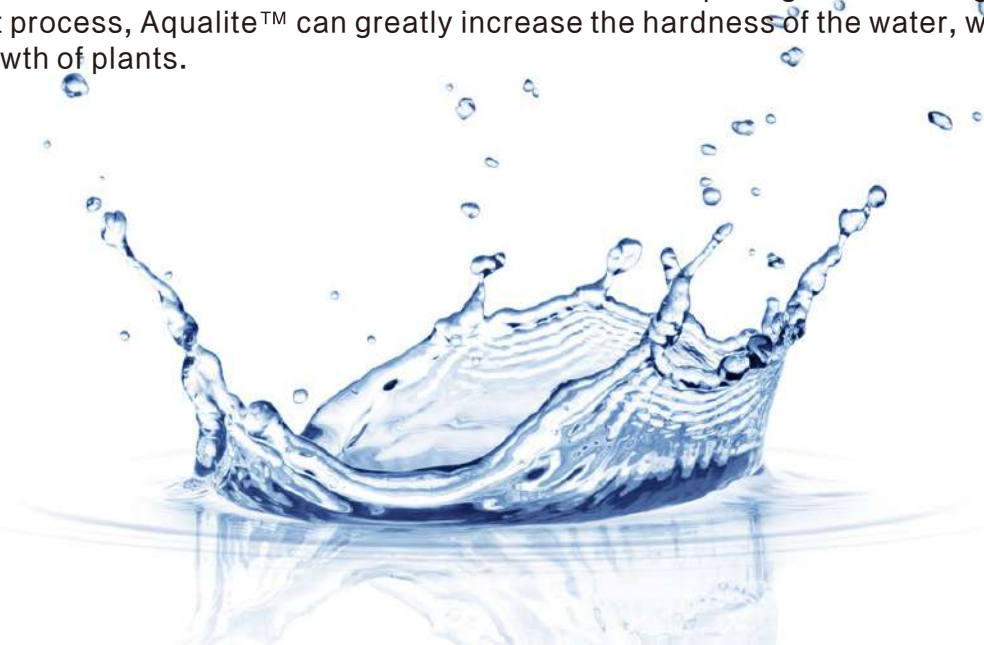
Aqualite™ filters particles down to 1 μm in agricultural irrigation system applications. In comparison, typical sand filters can only remove particles down to 50 μm , while carbon filters can remove particles down to 25 μm .

2. The best guarantee of food safety – effective sterilization

More and more local cultivation relies on greenhouse and hydroponic systems, and the safety of irrigation water is an important part of food safety control. Filtration of irrigation water with Aqualite™ has been documented to reduce bacteria, viruses and fungi in water by 44% to 98%. Bacteria are retained by the beads, in part because of their size. Apparently, this effect is not seen in sand or carbon filters, instead, it is usually a medium that promotes bacterial growth.

3. Improve water hardness

Water that contains large amounts of dissolved calcium or magnesium salts, or both, is described as "hard water." Other cations such as iron, manganese, aluminum and zinc also contribute to hardness. Hardness does not directly affect plants, but the hardness caused by bicarbonate can affect the soil and thus have an indirect effect on plant growth. During the water treatment process, Aqualite™ can greatly increase the hardness of the water, which benefits the growth of plants.





CONTACT US

Head Office :

Josab Water Solutions AB

Kungsgatan 29

111 56 Stockholm, Sweden

☎ +46-8 1213 8900

✉ info@josab.com

🌐 www.josab.com